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ABSTRACT

The present investigation extended the methodology to investigate the effects of viewed aggression on groups of two and four children. The present study employed a 2 x 2 x 3 factorial design, using as independent variables sex of the child, group size (two or four children), and cartoon condition (aggressive cartoon, nonaggressive cartoon, and no cartoon). Forty-eight boys and 48 girls of kindergarten age were randomly assigned to the experimental groups. A factor analysis of the dependent measures identified four factors, accounting for 85 percent of the total variance, each of which responded differently to the independent variables. The finding that (a) transgressive-aggressive was not affected by viewing aggressive cartoons, and (b) that normative-aggression loads on the same factor as normative-play, rejects the assumption that aggression is a single class of behavior and rejects the hypothesis that the effect of viewing aggressive models reduce inhibitions against aggression. The results are interpreted in terms of factors affecting levels of activity. (Author)

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THE EFFECTS OF VIEWED AGGRESSION ON THE GROUP PLAY OF CHILDREN

by

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Abstract

Previous research on the effects of visual-media aggression has regarded aggression as a single class of behavior. Particularly absent from this literature is the distinction between responses which are appropriate for the target of aggression (normative-aggression) and responses which are inappropriate for the target (transgressive-aggression). The general methodology has also involved testing only one child at a time. The present investigation extended the methodology to investigate the effects of viewed aggression on groups of two and four children. The present study employed a 2 x 2 x 3 factorial design, using as independent variables sex of the child, group size (two or four children), and cartoon condition (aggressive cartoon, nonaggressive cartoon, and no cartoon). Forty-eight boys and 48 girls of kindergarten age were randomly assigned to the experimental groups. A factor analysis of the dependent measures identified four factors, accounting for 85 percent of the total variance, each of which responded differently to the independent variables. Factor I, normative-play-normative-aggression, showed an increase in occurrance in the cartoon conditions. Factor II, transgressive-aggression, showed a sex difference, but no change as a result of the cartoon condition. While more children did commit at least one act of aggression against another child following the aggressive cartoon, the proportion of interpersonal aggressive acts and the total proportion of all transgressive-aggressive responses were not affected by the cartoon condition. Factors III and IV were composed of time of play measures and showed differences between group size conditions. The finding that (a) transgressive-aggression was not affected by viewing aggressive cartoons,

and (b) that normative-aggression loads on the same factor as normative-play, rejects the assumption that aggression is a single class of behavior and rejects the hypothesis that the effect of viewing aggressive models reduces inhibitions against aggression. The results are interpreted in terms of factors affecting levels of activity.

INTRODUCTION

A major problem in the study of aggression has been its definition. The psychological definition generally follows one of two alternatives: Aggression occurs when there is intent to inflict harm; or, the form of the act describes its aggressive character (Kaufman, 1965). In terms of the effects of viewed aggression on subsequent aggression, the intent to inflict harm definition has generally been used when college students and other adults were studied. Following this definition, Berkowitz (1962) suggests that viewed aggression leads to subsequent aggression when the viewer is already angered, and this probably does not occur in children (p. 243). The form of the act definition has generally been used when children are subjects in a viewed aggression experiment. Bandura (1965; Bandura and Walters, 1963) states that this is a more useful definition in that it allows one to study the acquisition and development of the response. From this position, Bandura, Ross and Ross (1961; 1963a, 1963b) have studied the acquisition of novel aggressive responses (directed against a Bobo doll) by imitation, but have not shown that these responses are expressed in situations other than those in which they were acquired. In reviews of the literature on viewed aggression, the distinctions between the two definitions and subject populations are noted, but conclusions about the effects of viewed aggression do not take the different definitions and behavioral criteria into account (see Weiss, 1970; Goranson, 1970).

In the study of child play behavior, the form of the act definition does offer advantages. Intent to inflict harm may be difficult to judge in some types of games and aroused anger may be difficult to distinguish from role behavior in games played by or created by children. The form definition, however, requires an appropriate system of classification. The Bandura and Walters (1963) definition classifies responses as aggressive if they "could injure or damage if aimed at a vulnerable object" (p. 114, author's italics). By this definition

hitting, kicking, and striking with a hammer are aggressive acts. Hitting a Bobo doll is an aggressive act since hitting could be injurious if directed at a person. A problem with this definition is that it assumes a continuity of aggression across situations via the response alone without considering the stimulus situation in which learning occurred and that which is present at a future time when the action is again performed.

The social concern about aggression has as one of its criteria the nature of the target of aggression. As long as the target is classified as appropriate, society can accept and approve of the response. It is when the target of the response changes that society condemns the action. Shooting rifles at targets and (for some) hunting animals are acceptable for shooting responses. It is when the target shifts to persons or personal property that shooting becomes a problem for society. It is this type of distinction which has formed the basis for differences between prosocial and antisocial aggression (Sears, 1961).

A similar distinction can be made for the play behavior of children. Some toys are designed for aggressive responses. Bobo dolls are to be punched; pounding boards are to be hit with hammers; footballs and kick balls are for kicking. Each of these responses are aggressive in form but are appropriate for these particular toys. The appropriateness of these responses is identical to the appropriateness of nonaggressive play with nonaggressive toys, such as building houses, towers and roads with blocks, spinning a top, and having parties with toy dishes. These two types of play are normative play in the sense that the play is appropriate for the toy, acceptable to the child, and acceptable to adults responsible for the conduct of the child's play. The distinction between the two is that the first group is aggressive in <u>form</u> while the latter is not. This distinction does not, however, detract from the acceptability of the normative quality of the play defined by its appropriateness for the toy. This type of aggression I define as <u>normative-aggression</u> to indicate its similarity to normative-play yet recognize the nature of its form.

A second type of aggressive play comes through the use of aggressive toys on an inappropriate object or using a nonaggressive toy as a weapon. Shooting toys with a dart gun, using dolls or hand puppets as clubs or boxing gloves to carry out an attack, or throwing balls at toy dishes are responses of this type. One characteristic of this play is that it breaks the implicit "rules" of play defined by the toy. This type of play may also break rules established by the children themselves or by supervising adults. Attacking another child and knocking over toys another child is playing with are examples of this kind of aggression. Since rule breaking, defined either by adults, other children or characteristics of the toys, is characteristic of this type of aggression, I define it as <u>transgressive-aggression</u>.

When this type of distinction is drawn, there is no necessary assumption that children will fail to discriminate normative-aggressive responses from their injurious or destructive counterparts. It is also possible that the acquisition of transgressive-agressive responses may be separate from those of normative-aggression. It is not a necessary assumption that normative-aggressive responses form the basis for transgressive-aggression or that generalization between the two types of aggression occurs.

Considering these distinctions and the possibility that there may be a difference in the consequences of aggression directed toward objects and aggression directed toward persons, a more useful classification of responses is needed. It is suggested that classifying aggressive responses as normative-aggression and transgressive-aggression directed toward an object and transgressive-aggression directed toward a person is a more useful system for studying the effects of viewed aggression. With such a system, it is possible to examine the type of play viewed aggression might affect and help clarify the relationship between visual media violence and the hypothesized effect on social behavior.

The imitation model and method has been the major method of investigation of the effects of viewed aggression on child behavior. However, there are limitations in going directly from studies of imitative aggression (Bandura, Ross and Ross, 1963a,b; Hicks, 1965) of regularly presented visual and media aggression. One problem is in the relationship between the response and the target in the experimental studies. In television and films, the targets of aggression include other characters or person and objects not designed for aggression, as in blowing up or burning cars, houses and buildings. In the experimental films, the target has usually been a Bobo doll, which was designed for aggressive responses and the viewed responses include hitting, kicking and throwing the doll; all of which are appropriate for the Bobo doll and are normative-aggressive responses. It is not necessary to assume that the imitation of aggressive acts, when they are normative-aggressive acts and directed at an appropriate object, will increase the probability that those same acts will subsequently become transgressive-aggressive acts directed toward a vulnerable or inappropriate object, a conclusion implied by Bandura (1963; Bandura and Walters, 1963) and Goranson (1970).

The present study was conducted to examine the structure of aggressive play within the context of the proposed definitions, and the effects of viewed aggression on the proposed types of aggression.

Since only one study was found using a group of children (Siegel, 1956) group size was investigated to see if this variable would affect the expression of either type of aggression.

METHOD

Subjects. The subjects were 96 children, 48 boys and 48 girls, from the kindergarten classes at a public school. The childrens' ages ranged from 66 to 81 months with a mean age of 73.7 months. Subjects were randomly assigned to same-sexed groups with the exception that very close friends or children that were frequently agonistic toward each other, according to teacher reports, were not assigned to the same group.

Design. The study employed a 2 x 2 x 3 factorial design. The factors were the sex of the child; size of the group (two or four children); and cartoon condition (aggressive cartoon, nonaggressive cartoon, no cartoon).

Cartoons. The aggressive cartoon was entitled "Clown of the Jungle" (A Warner Brothers release) with Donald Duck as a bird photographer. A clown bird constantly interrupted or frustrated Donald Duck. Each of these two characters committed 17 aggressive acts against the other. These acts included the bird blowing up Donald Duck with an exploding cigar and Donald Duck shooting the bird with an 8 sec. machine gun blast. In each of these cases, the scene immediately following focused on the "victim" who was completely intact and unharmed. Other acts included hitting with boxing gloves and clubs, smashing the "victim" into rocks and a sequence of Donald Duck and the bird pounding a replica of the bird into the ground with hammers.

The nonaggressive cartoon was entitled "The Bug Parade" (A Warner Brothers release). It was a humorous description of 17 different insects. This cartoon contained only one aggressive act - the head portion of a centipede kicked off the tail portion when it would not keep in step. This event occurred about halfway through the cartoon.

Each of the cartoons was a color sound film lasting 8 minutes.

Experimental Procedure. For the cartoon conditions, the group of children was taken from the classroom to the experimental room by the experimenter. The children were seated at a table, separated from each other by partitions, and watched the cartoon. Immediately after the cartoon, the children were taken into

the play area and allowed to play for 20 minutes. They were told that they could play with any of the toys and could do anything they wished with the toys. The only rule was that they were to stay inside the play area. They were also told that the experimenter was busy in another part of the room (out of sight) and could not play with them. After the play session was over, the children were individually asked who was in the cartoon, what happened in the cartoon, and how much they liked the cartoon ("not at all," "a little," or "a whole lot").

For the no-cartoon condition, the children were taken to the experimental room and immediately started the 20 minute play period with the same instructions as above. After the play session, half of each of the children in each group-size condition watched the aggressive cartoon and half watched the nonaggressive cartoon. Then the children were asked the same questions as those in the cartoon groups.

The play area was 3.96 x 3.35 meters. A wall formed one side, tables formed two adjoining sides and a 1.29 meter tall partition formed the fourth side. A closed circuit television system and the experimenter were behind the partition. In one corner of the play area was a table containing 2 hand puppets per child, 1 dart gun and 2 rubber-headed darts per child and 2 rubber-headed throw darts per child. A dart target was placed on the wall. In the opposite corner was a table containing 1 puzzle per child. Other toys, around the sides of the play area, were a doll house with a family of 4 dolls and furniture, a set of building blocks, a set of toy soldiers, 2 toy dump trucks, 2 peg boards with plastic hammers, and a .91 meter tall inflated Bobo doll.

Scoring Procedure. The play sessions were recorded on videotape and rerun later to score the dependent measures. Only session numbers were kept on the videotape. After scoring was completed, session numbers were associated with their experimental conditions for analysis. A female assistant scored sessions which she had not helped to conduct to provide data for reliability of scoring dependent measures. These two procedures were used to approximate a blind scoring procedure.

DEPENDENT MEASURES

Normitative-aggression. The responses in this category were acts which are appropriate for the object of aggression. Examples include pounding with the hammer on the pegboard, shooting or throwing a dart at the target, bouncing on, kicking or punching the Bobo doll, and toy soldiers shooting at each other.

Transgressive-aggression. This category included all aggressive responses in which the object of the aggression was not appropriate for the particular weapon used. It is this category of responses which approximated the definition of aggression by Bandura and Walters (1963). The responses in this category were divided into two types: those directed at objects and those directed at persons. Object responses included shooting the Bobo doll, the toy soldiers, or any other toy with the gun; using any other toy as a weapon against another toy, e.g., Bobo against the toy soldiers or the doll house and puppets hitting other puppets. Person responses were defined as any attack against another child, including shooting him, but not threatening him, hitting him with any toy, or taking a toy away from another child by grabbing it without asking for it.

The frequency of each of these three types of aggression was recorded by depressing one of three microswitches activating pens on an Easterline Angus event recorder for each act committed. The time measures (see below) and aggression measures were recorded at the same time for each child during reviews of the videotape. This procedure allowed the separate analysis of type of aggression occuring during both Independent and Interactive play.

Total-aggression. This measure is the total number of aggressive responses committed by each child. The score was computed by adding the normative-aggression score and the two categories of the transgressive-aggression scores.

High Intensity Responses. Responses of any aggressive category were classified as high intensity if they were potentially destructive or harmful, or were performed with maximum vigor. Examples included kicking or hitting the Bobo doll very hard, throwing toys on the floor or against the wall very hard and a strong attack against another person.

Imitative-aggression. Two sequences from the aggressive cartoon appeared to be long enough and unique enough that they might be imitated. The first was the sequence in which both Donald Duck and the clown bird pounded a replica of the bird into the ground with hammers. This sequence appeared about halfway through the cartoon. Responses were scored as imitating of this sequence if the child used the plastic hammer from the pegboard to hit any other object or person. The second sequence, which was the next to last scene, was Donald Duck shooting an 8 sec. machine gun blast at the bird. Responses were scored as imitating this sequence if the child used a dart gun or one of the toy soldiers for a verbal machine gun blast or made movements indicating a machine gun blast.

In the non-aggressive cartoon, the centipede kicked off his rear portion. Responses were scored as imitating this response if the child kicked any object, even when it was a normative-aggression, e.g., kicking the Bobo doll.

The frequency of each of these types of responses was recorded by hand during one review of the videotape.

Independent Play. The child played with a toy by himself. He did not interact with other children by playing with the same toy or showing his toy to another child. Play time was measured from the time the child first touched a toy until he put it down and turned his attention to something else in the room.

Interactive Play. The child interacted with another child by playing with the same toy or by playing with different toys but playing together, e.g., having a puppet show or using the dump trucks as moving vans for the doll house furniture. This category also included taking away, or attempting to take away, a toy from another child or preventing another child from playing with a toy. Play time was measured from the time two or more children touched the same toy or began playing with toys together until the child left the group stopped playing with the toys.

Total Play. Total play time was the sum of the Independent play time and the Interactive play time. It represented the total amount of time the child spent playing with a toy.

The amount of play time for Independent and Interactive play was measured by pressing a microswitch activating separate pens on the Easterline Angus event recorder.

Number of Toys Played With. This score reflected the number of times a child changed from one toy to another. A toy was scored as played with each time the child picked it up or touched it. Play with the toy stopped when the child put the toy down and turned his attention away from it. Under this procedure, a single toy could have several scores in a row if the child left the toy and then returned to it.

The number of toys played with was scored by hand.

Total Number of Responses. Each response was defined as a single manipulation of an object. Single manipulations included picking up a toy, putting it down, each punch of the Bobo doll, each hit with a hammer, each load, each aim, and each shot with the dart gun, each movement of a doll or puppet, and each placement of a puzzle piece.

The total number of responses were recorded on a hand counter during one review of the videotape.

Proportion of Responses. The dependent measure for each of the aggressive categories of response was the proportion of aggressive responses committed by each child. The proportion of aggressive responses was computed by dividing the number of aggressive responses in each category by the total number of responses. This measure was used for analysis to control for variability due to individual differences in amount of activity.

Results and Discussion

Reliabilities for each of the dependent measures were computed for 26 of the subjects scored independently by both the experimenter and a female assistant. The correlations were all .90 or higher.

Each of the dependent measures was analyzed by an analysis of variance. The sub-measures of transgressive-aggression were analyzed by Kruskal-Wallis tests and X^2 tests on the proportion of children committing aggressive acts.

The data from all of the subjects were pooled and a principal-axis factor analysis was made on all scores except imitation. Since only one child made one response on this measure, it was excluded from analysis. A varimax rotation of the factors did not significantly alter the factor loadings or the number of factors derived. Four factors were extracted with eigen roots greater than 1.0, and these four factors accounted for 85.68 percent of the total variance. Tables 1 and 2 present the correlations and factor loadings.

There are two findings of central importance. First, four factors of play were identified by the factor analysis. Each of these factors responded differently to the independent variables in this study. Secondly, cartoon viewing increases appropriate play with toys, both normative-play and normative-aggressive play, particularly for girls. Cartoon viewing of either aggressive or non-aggressive cartoons did not, however, affect the amount of transgressive-aggression displayed in subsequent play behavior.

The conceptual distinction between normative-aggression and transgressive-aggression is supported by both the factor analysis and the difference in the way each of the measures loading on the factors were affected by the independent variables.

Factor I	
Response Measure	Loading
Normative-aggression (Interactive play)	.68
Normative-aggression (Independent play)	.81
Total normative-aggression	.93
Total aggressive responses	.95
Total number of responses	.80
Number of toys	.34

Factor I accounted for 41.76 percent of the common variance. All of these measures are characterized by appropriate toy play and manipulative activity. This factor is then identified as normative-play-normative-aggression.

Factor I, normative-play-normative-aggression, is characterized by a cartoon by sex interaction. Girls show a higher level of activity after viewing an aggressive cartoon than when they have not seen a cartoon. Boys show a fairly constant level of activity that is not affected by the cartoon condition. Effects of group size are present in interaction with cartoon condition in two of the measures, total number of responses and normative-aggression in interactive play. In these cases, groups of size two showed higher levels of activity than did groups of size four. The measure of normative-aggression in interactive play also shows a three way interaction that is characteristic of Factor III, interactive-independent play. It should be noted that this measure also has high loadings on both factors.

Factor II	
Response Measure	Loading
Transgressive-aggression (Interactive play)	.82
Person aggression	.69
Total transgressive-aggression	.86

Factor II accounted for 25.86 percent of the common variance. All of these measures are in the transgressive-aggression category and this factor was identified by that category.

Factor II, transgressive-aggression, is tentatively characterized by a main effect for sex differences. This characteristic is suggested primarily on the basis of the analysis of the total proportion of transgressive-aggression and the failure to find effects due to the cartoon condition on the proportion of responses in the other transgressive-aggressive measures. While viewing an aggressive cartoon does seem to stimulate more children to commit an aggressive act against another child, it does not affect the proportion of responses directed against other children. Another characteristic of this factor, and one that makes it difficult to work with statistically, is its low rate of occurrence in terms of both the number of children expressing this type of behavior and the proportion of responses accounted for by the measures making up this factor.

Factor III	
Response Measure	Loading
Independent play time	-.71
Interactive play time	.73

Factor III accounted for 20.98 percent of the common variance. These measures identify the time children spent playing alone and with others and was identified as independent-interactive play. As was noted, normative-aggression in interactive play had a high loading (.63) on this factor.

Factor III, independent-interactive play time, is characterized by three-way interaction of cartoon condition, sex and group size. Boys spend more time playing together than do girls and smaller groups tend to spend less time playing together than do larger groups. The cartoon condition appears to stimulate independent play for smaller groups and, particularly, for girls in smaller groups.

Factor IV	
Response Measure	Loading
Total play time	.75
Transgressive-aggression (Independent play)	.66

Factor IV accounted for 11.40 percent of the common variance. The combination of these two measures on one factor is difficult to interpret. The low correlation of transgressive-aggression in independent play with other measures offers no suggestion of criteria of identification. Since other measures of transgressive-aggression form a separate factor, this factor is tentatively identified as a total play time factor.

Factor IV, total play time, is the most difficult to characterize. Total play time shows main effects for group size and sex of child. This is the only measure that shows this particular pattern. Boys spend more time in play than do girls. Girls in larger groups spend less time engaged in play than do girls in smaller groups.

Why transgressive-aggression occurring during independent play loads on this factor is difficult to say. This measure is not highly correlated with any other measure which reduces the possibility that the amount of time a child spends in play or the amount of activity engaged in facilitates the occurrence of transgressive-aggression while alone.

The total pattern of results is best integrated in terms of factors that affect the level of activity of play. When attention is focused on specific categories of manipulative play group size effects are minimal and events occurring prior to the play situation do show some specific effects. Viewing cartoons did increase the level of activity for girls, but the effect was present only for normative-play and normative-aggression play which was appropriate for the toy. Girls did show more play with the dart guns, the darts and the Bobo doll after viewing cartoons and, particularly, after viewing aggressive cartoons. This

aggressive play, however, continued to be limited to vigorous activity appropriate to its object. This type of play did not dispose the child to commit a transgressive-aggressive act even while he was playing with the aggressive toy. Further support for this selective effect comes from the fact that the total aggressive response measure is accounted for primarily in the correlations with the normative-aggressive measures.

The transgressive-aggression measures included using aggressive toys in an inappropriate way and using a nonaggressive toy in an aggressive manner, either as a weapon or a target. All of the toys available to the children served as a target for an aggressive response at least once during the course of the experiment. Particularly the boys used nonaggressive toys as targets for the dart guns on occasion. Nonaggressive toys were seldom used as weapons. Of these toys, the hand puppets were used most often; sometimes being used as boxing gloves against other children or the Bobo doll and sometimes as monsters attacking other children, other puppets, or the Bobo doll. These acts occurred with a very low frequency and this frequency was not affected by the cartoon condition or the changes in the level of activity during play.

While cartoon viewing did affect the amount of activity children display, it did not stimulate intense aggressive responding. This finding is consistent with the results reported by Siegel (1956). This finding may be accounted for by the fact that the children are in an experimental situation playing with toys that belong to the experimenter; not toys that belong to themselves.

In this study, there was no evidence that imitation shaped the form of aggressive play. The dart gun and the weaponry carried by the toy soldiers could have been used to imitate machine gun bursts, but this did not occur. The hammer from the pounding board was availabel to be used against any other toy or even in a real or a feigned response against another child. This also did not occur.

With the more general characteristics of play, the sex differences are still present and group size begins to show an influence. Boys spent more time in play than did girls and almost all of their time was spent in play. The total number of responses showed a fairly constant level of activity for boys that was little affected by group size or by cartoon condition. Girls spent less time in play and the time spent in play was affected by both group size and cartoon condition. Girls also tended to have a lower rate of manipulative play which was increased by viewing cartoons and a smaller group size.

Although sex may be a confounding factor, this pattern of results suggests that the child who does not find sufficient cues in the play situation to direct his play will be most susceptible to influence by events prior to the play situation. This influence may be either to increase the general level of activity or to direct the child to particular toys to facilitate an increased activity level. This interpretation is consistent with the cueing hypothesis, since the level of activity and the selection of toys allowing normative-play-normative-aggression are facilitated rather than responses which are prohibited or are transgressive in nature.

That a general arousal effect rather than the modification of selected responses is produced by viewing cartoons is further supported by the lack of significant differences between aggressive cartoons and nonaggressive cartoons. In most of the response measures, the nonaggressive cartoons produced scores higher than the control group and, in some cases, particularly for groups of two boys, produced scores higher than the aggressive cartoons. This lack of differences between aggressive and nonaggressive cartoons is consistent with the results reported by Siegel (1956) and Cameron, Abraham and Chernicoff (1971).

There are two possible ways in which viewing any cartoon could produce the effects that have been found. The most obvious is a difference in the amount of activity in aggressive and nonaggressive cartoons. This factor has not been controlled in the examination of the effects of viewed aggression. The second factor, and one which may facilitate the former, is the period of inactivity during viewing.

The fact that measures which are defined by the appropriateness of the play comprise a single factor independent of measures characteristic of transgressive-aggression strongly suggests that children define play as appropriate or inappropriate. That the transgressive-aggression measures were not affected by the cartoon condition argues that, as the result of viewing aggression in a cartoon, there was no reduction of inhibitions against behaviors which the child has learned are wrong.

The children generally did remain quiet and all remained in their seats during the cartoon presentation. This quiet period of five to ten minutes while viewing activity may also instigate an increase in activity when the children are subsequently allowed to play.

The effect of group size on the more general characteristics of play is also consistent with this interpretation. With larger groups of children, there is more opportunity for distraction from manipulative play to observe others which would reduce total play time and the total number of responses. There is also a greater opportunity for verbal interaction independent of manipulative play which would reduce the level of manipulative play and total play time. Further support for these effects would require a closer examination of the activity during non-play time and the nature of verbal activity during the play period.

The fact that the aggressive cartoon increased the general level of normative-play and normative-aggression but not transgressive-aggression raises several questions about the conclusions of previous research. Bandura (1963, 1965) has stated that the effect of viewing aggression is to reduce the inhibitions against aggression. The identification of the normative-play-normative-aggression factor as separate from the transgressive-aggression factor suggests that reduction of inhibitions is not the result of viewed aggression. Rather, viewing an aggressive cartoon increases the total normative play activity of the child. Part of this activity is aggressive in nature as defined by a social judgement of the response, as Bandura and Walters (1963) have pointed out. However, this judgement is made by an adult, not the child. Children seem to judge the characteristics of their play by other criteria. With the exception of one group, the means for the total number of aggressive responses are less than 35 percent of the total number of responses, and normative-aggression accounts for most of these responses. These measures all responded to the independent variables in a manner similar to the total number of responses, of which more than 65 percent are normative-play responses.

Table I

G matrix conversion of the correlations between the dependent variables.

Dependent Measure	1	2	3	4	5
1. Independent play time	.99	-.98	-.17	-.09	.42
2. Interactive play time		.99	.37	.10	-.41
3. Total play time			.98	.02	-.06
4. Normative-aggression (interactive play)				1.00	.23
5. Normative-aggression (independent play)					1.00
6. Total normative-aggression					
7. Transgressive-aggression (interactive play)					
8. Transgressive-aggression (independent play)					
9. Transgressive-aggression (person)					
10. Total transgressive-aggression					
11. Total aggression					
12. Total number of responses					
13. Number of toys					
14. Intense responses					

Table I (continued)

	6	7	8	9	10	11	12	13	14
1.	.16	.13	.20	-.02	-.06	.15	.32	.19	-.01
2.	-.15	.14	-.15	.03	.08	-.14	-.32	-.26	.04
3.	-.02	.10	.19	.07	.14	-.01	-.06	-.34	.11
4.	.84	.01	-.09	-.05	-.03	.83	.63	.15	.24
5.	.71	.18	.28	.17	.26	.72	.65	.21	.11
6.	1.00	.11	.08	.06	.12	.99	.81	.22	.24
7.		1.00	.06	.56	.73	.21	.07	.23	.28
8.			1.00	.14	.33	.12	.09	.15	.15
9.				1.00	.73	.14	.02	.20	.12
10.					1.00	.23	.09	.27	.29
11.						1.00	.80	.25	.26
12.							.70	.22	.18
13.								.30	.10
14.									.18

Table II

Factor loadings and percent of total variance for the dependent measures.

Measure	Factor I	II	III	IV
1. Independent play time	.37	-.49	-.71	.12
2. Interactive play time	-.36	.53	.73	.05
3. Total play time	-.07	.35	.28	.75
4. Normative-aggression (interactive play)	.68	-.12	.63	-.10
5. Normative-aggression (independent play)	.81	-.10	-.21	.15
6. Total normative-aggression	.93	-.14	.34	.01
7. Transgressive-aggression (interactive play)	.32	.82	-.18	-.22
8. Transgressive-aggression (independent play)	.25	.18	-.36	.66
9. Transgressive-aggression (person)	.26	.69	-.31	-.17
10. Total transgressive-aggression	.38	.86	-.31	-.05
11. Total aggression	.95	-.04	.30	.00
12. Total number of responses	.80	-.21	.12	.01
13. Number of toys	.34	.05	-.23	-.25
14. Intense responses	.27	.21	.06	.06
Percent of total variance	35.72	22.16	17.97	9.83
Percent of common variance	41.76	25.86	20.99	11.40

References

Bandura, A. What TV violence can do to your child. Look, October 22, 1963, pp. 46-52.

Bandura, A. Vicarious processes: A case of no-trial learning. In L. Berkowitz (ed.), Advances in Experimental Social Psychology, Vol. 2, New York: Academic Press, 1965.

Bandura, A., Ross, D., and Ross, S.A. Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 1961, 63, 575-582.

Bandura, A., Ross, D., and Ross, S.A. Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology, 1963, 66, 3-11. (a).

Bandura, A., Ross, D., and Ross, S.A. Vicarious reinforcement and imitative learning. Journal of Abnormal and Social Psychology, 1963, 67, 601-607. (b).

Bandura, A., and Walters, R.H. Social Learning and Personality Development. New York: Holt, Rinehart & Winston, 1963.

Berkowitz, L. Aggression. New York: McGraw-Hill, 1962.

Cameron, S.M., Abraham, L.K., and Chernicoff, J.B.. The effect of exposure to an aggressive cartoon on children's play. Paper presented at the meeting of the Eastern Psychological Association, New York, April, 1971.

Goranson, R.E. Media violence and aggressive behavior: A review of experimental research. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. 5. New York: Academic Press, 1970, pp. 1-31.

Hicks, D. Imitation and retention of film-mediated aggressive peer and adult models. Journal of Personality and Social Psychology, 1965, 2, 97-100.

Kaufmann, H. Definitions and methodology in the study of aggression. Psychological Bulletin, 1965, 64, 351-364.

Sears, R.R. Relation of early socialization experiences to aggression in middle childhood. Journal of Abnormal and Social Psychology, 1961, 63, 466-492.

Siegel, A. Film-mediated fantasy aggression and strength of aggressive drive. Child Development, 1956, 27, 365-378.

Weiss, W. Effects of the mass media of communication. In G. Lindzey, and E. Aronson (Eds.), Handbook of Social Psychology, 1970, Vol. 5, pp. 77-195.